

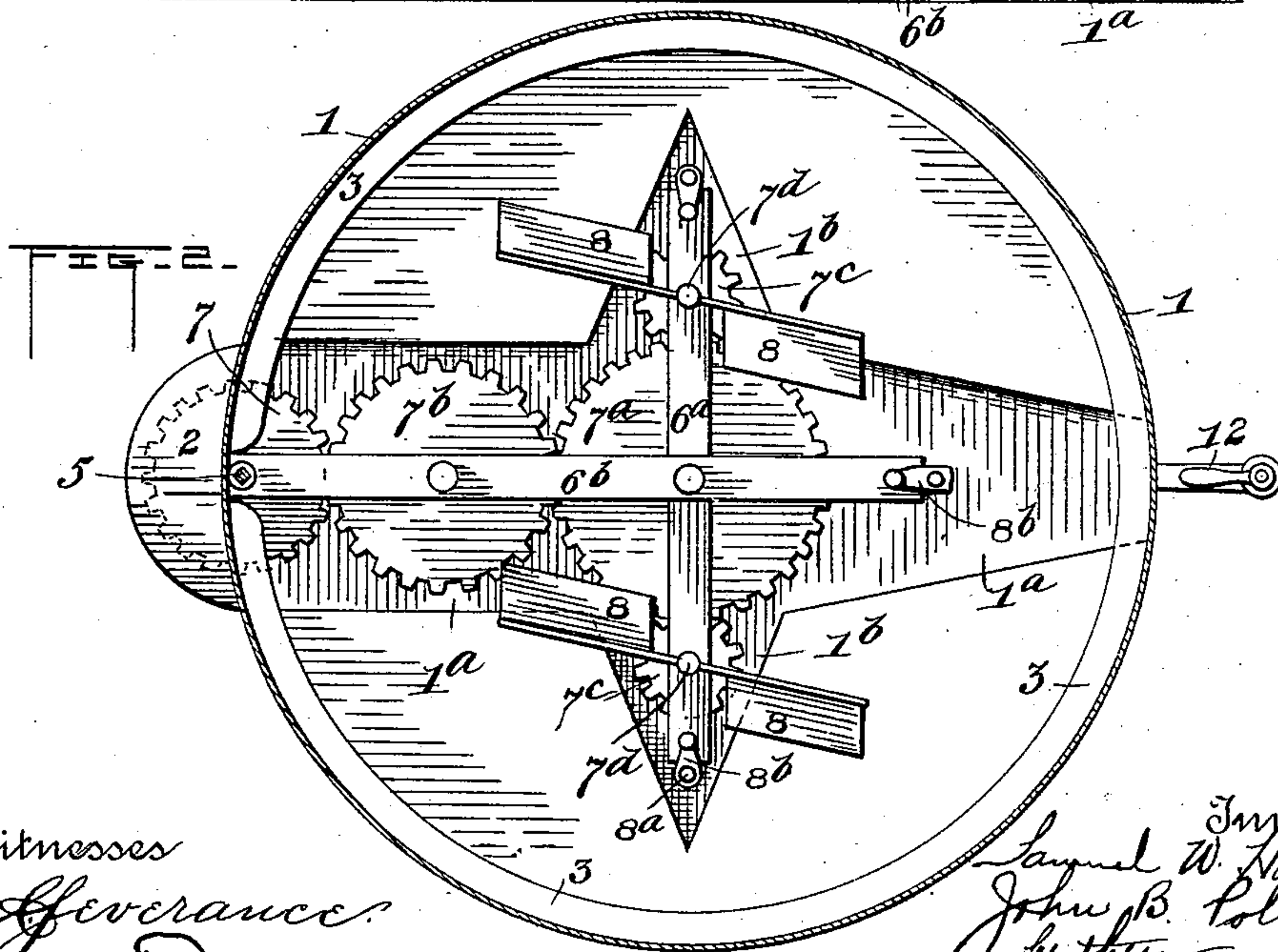
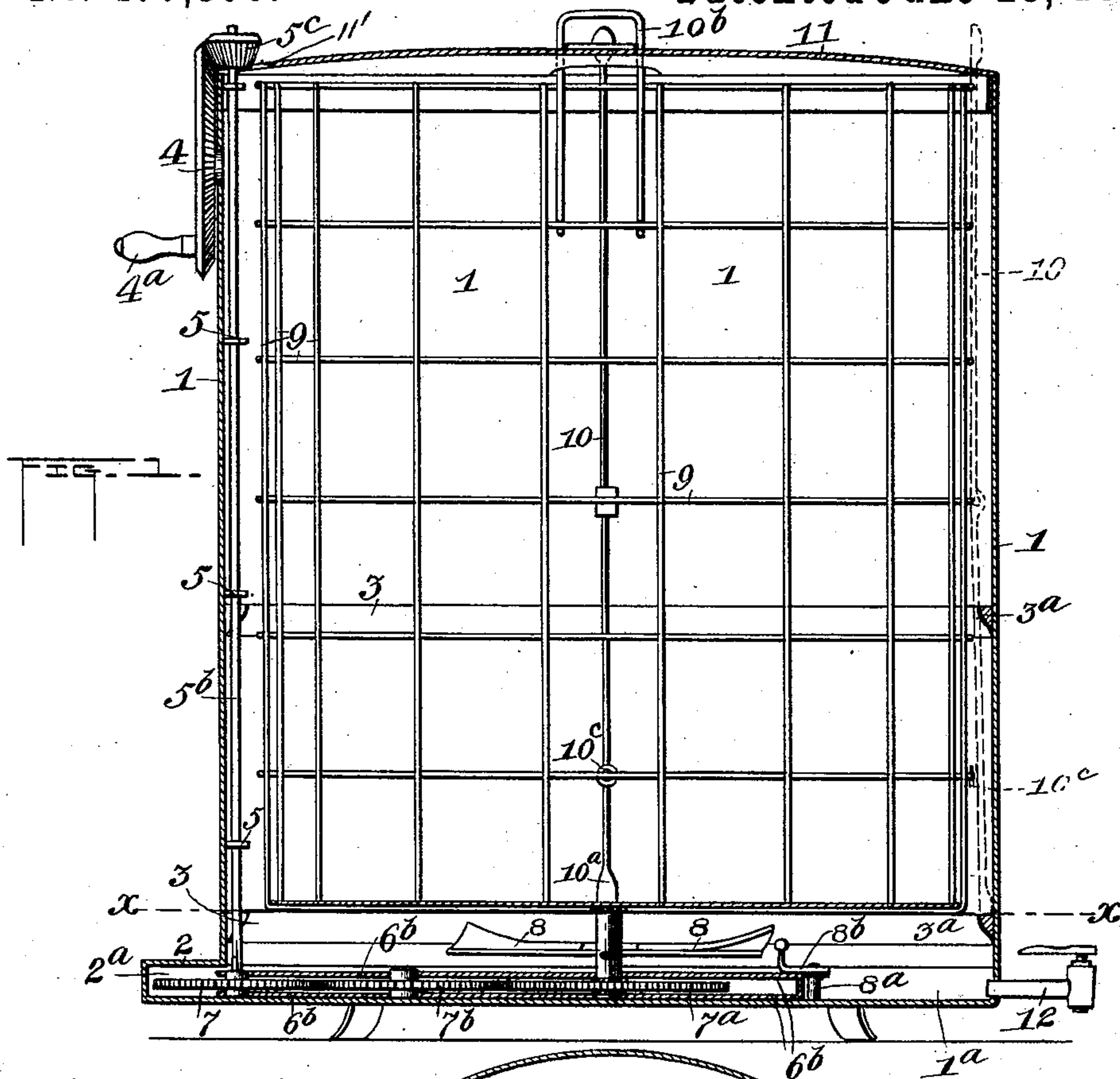
(No Model.)

2 Sheets—Sheet 1.

S. W. HARMAN & J. B. POLK.
DISH CLEANER.

No. 477,860.

Patented June 28, 1892.



Witnesses
S. W. Harman
J. B. Polk
T. M. Dorsey

Inventors:
S. W. Harman
J. B. Polk
by their
J. B. Lawry Attorney

(No Model.)

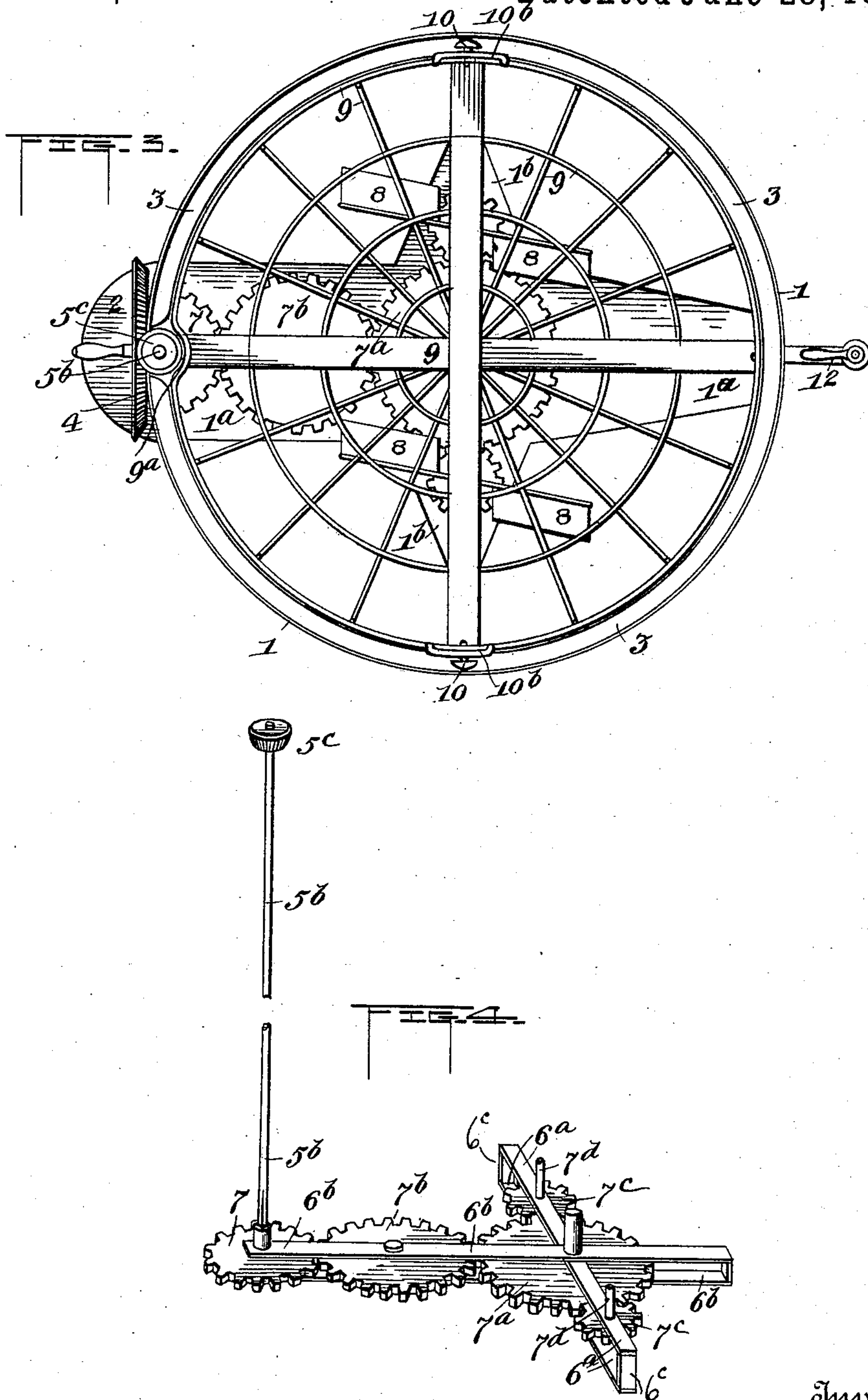
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G. M. Orsey

Inventors;

Samuel W. Harman
John B. Polk
by their Attorney
J. B. Sawyer Attorney

UNITED STATES PATENT OFFICE.

SAMUEL W. HARMAN AND JOHN B. POLK, OF ROGERS, ARKANSAS; SAID
POLK ASSIGNOR TO SAID HARMAN.

DISH-CLEANER.

SPECIFICATION forming part of Letters Patent No. 477,860, dated June 28, 1892.

Application filed September 29, 1891. Serial No. 407,174. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL W. HARMAN and JOHN B. POLK, citizens of the United States, residing at Rogers, in the county of Benton and State of Arkansas, have invented certain new and useful Improvements in Washing-Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to certain new and useful improvements in washing-machines, it being especially applicable to dish-washing machines, and it has for its object to provide a machine of the class described in which the articles to be washed are suspended within a suitable vessel over revolving blades, whereby the water contained within the said vessel will be thrown up and upon the said articles, and for this purpose my invention consists in the combination, construction, and arrangement of the parts of which it is contained, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by corresponding numerals, Figure 1 is a central vertical section of our invention, the parts being assembled together. Fig. 2 is a horizontal section of the vessel, taken on line *xx* of Fig. 1. Fig. 3 is a plan view of the invention, the cover being removed. Fig. 4 is a detailed perspective view of the actuating mechanism.

The outer or inclosing vessel 1 is preferably cylindrical in shape, as shown, and has a portion of its bottom depressed, as shown. This depressed portion consists of a diametrical depression 1^a, one end of which has parallel sides and the other inclined sides, while triangular depressions 1^b are formed at the junction of the parallel and inclined side walls of the diametrical depression 1^a, with which depression the depressions 1^b communicate, the latter being on opposite sides of the center of the bottom. A semicircular projection 2 is formed upon the outside of

the vessel 1 at the bottom thereof, and is recessed, as at 2^a, the recess therein communicating with the outer end of the parallel-sided portion of the diametrical depression 1^a. A plurality of annular ledges 3 are formed upon the inner surface of the said vessel at different heights from the bottom, the lower surface of the said ledges, which serve as supports for the dish-rack, being beveled as at 3^a. A beveled gear-wheel 4 is mounted upon the outside of the vessel 1, near the top thereof, and directly over the projection 2, the said wheel 4 being provided with suitable means for driving it, such as a crank-handle 4^a. A series of bearings 5 are formed upon the inside of the vessel 1, extending in a vertical line upward from above the center of the recess 2^a in the projection 2. A shaft 5^b, having a squared lower end, is contained within the bearings 5 and has a beveled gear-wheel 5^c upon its upper end above the top of the vessel 1, the said wheel 5^c gearing with the wheel 4, as shown.

A frame-work 6, carrying the actuating mechanism, is contained within the depressions 1^a and 1^b, the said frame-work being composed of bars 6^a and 6^b. Two of each of the said bars are used, the one above the other, a sufficient space being left between them for the insertion of gear-wheels, as will be hereinafter more fully described, the two sets being crossed and secured together, causing the frame-work to assume the form shown in detail in Fig. 4. Both ends of the shorter set of bars 6^a are connected together, as at 6^c, while one end of the bars 6^b are connected together, the opposite and longer end thereof being unconnected, except by the pinion of the gear-wheel 7, which is mounted therein, a portion of the said wheel projecting beyond the ends of the bars 6^b and being adapted to be contained within the recess 2^a in the enlargement 2 on the vessel. A gear-wheel 7^a is also mounted within the said frame at the junction of the two sets of bars 6^a and 6^b, while an intermediate wheel 7^b is mounted between the bars 6^b and connects the wheels 7 and 7^b. Gear-wheels 7^c are mounted between the bars 6^a and gear with the wheel 7^b, the shafts 7^d of the said wheel 7^c extending upward through the upper bar

6^a and carrying inclined blades 8 for forcing the water upward upon the dishes. The frame-work 6 is so proportioned as to be contained within the depression in the bottom of the vessel, thus economizing space and protecting the parts from injury. The longer bars 6^b are contained within the diametrical depression 1^a and the shorter bars 6^a within the depressions 1^b, the frame-work being adapted to be removably held in place by means of clamps 8^b, mounted upon the upper ends of posts 8^a, projecting upward from the bottom of the vessel, the said clamps being adapted to be turned upon their posts and to be caused to assume a position over the ends of the bars 6^a and 6^b, as shown. The pintle of the outer gear-wheel 7 projects above the upper bar 6^b and has a square recess therein in which the lower end of the squared base of the vertical shaft 5^b can be inserted. It will thus be seen that by rotating the wheel 4 that motion will be imparted to the wheel 5^c and to the shaft 5^b, carrying it, and thus to the wheels 7, 7^b, 7^a, and 7^c and to the blades 8, whereby the water will be thrown upward within the vessel. It will also be evident that upon withdrawing the vertical shaft 5^b from its bearings and loosening the clamps 8^b that the frame-work 6 and gear-wheels and blades carried thereby may be lifted from within the vessel. A crate 9 for the dishes and slightly smaller than the inside diameter of the vessel is contained within the latter, the said crate having an inset or recess 9^a in one of its sides for the passage of the vertical shaft 5^b and being formed of wire. Arms 10, having shoes 10^a upon their lower ends are pivoted upon the sides of the crate, their upper ends extending above the top thereof and being contiguous to handles 10^b on the crate, the shoes upon the lower ends of the said arms being forced outward by means of the springs 10^c, interposed between the lower end of said arms and crate. It will thus be seen that the said shoes will, when the crate is contained within the vessel, rest upon one of the annular ledges 3 and hold the crate in place, while if it be desired to lower the crate farther within the vessel it can be done by pressing the upper ends of the arms 10 outwardly and causing a reverse motion of the shoes on the lower end thereof, thus disengaging the latter from the ledges 3, upon which they may have rested. Upon

releasing the upper end of the arms the shoes 10^a will be again thrown outward by the springs 10^c; or if it be desired to lift the crate from without the vessel it can be done by means of the handles 10^b the beveled under surface 3^a of the ledges striking the upper surface of the shoes and forcing them inward against the pressure of the springs 10^c and permitting the crate to be drawn upward.

A cover, such as 11, (shown in dotted lines in Fig. 1,) having an aperture 11' in one edge thereof for the passage of the shaft 5^b, may be provided for the vessel 1, and a faucet—such as 12—can be applied to the vessel 1 and connected to the tapering end of the diametrical depression 1^a.

Having described our invention, what we claim is—

1. In a washing-machine, the combination, with a vessel having a depressed bottom, of a frame-work adapted to be removably secured within the depressions therein, the said frame-work carrying water-lifting blades and actuating gear-wheels therefor, a recessed projection upon one side of the base of the said vessel, the recess therein communicating with the depression in the bottom of the said vessel and adapted to partially contain one of the said actuating-wheels, a vertical shaft removably mounted within the said vessel and to one side thereof, having a beveled gear-wheel upon its upper end and its lower end adapted to drive the last-named actuating-wheel, and a beveled gear-wheel mounted upon the outside of the said vessel and gearing with the wheel upon the said vertical shaft, substantially as described.

2. In a washing-machine, the combination, with a vessel having annular ledges upon its sides and having water-lifting mechanism in the base thereof, of a crate adapted to be contained in the said vessel and having spring-actuated arms, having shoes upon their lower ends, pivoted thereto, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

SAMUEL W. HARMAN.
JOHN B. POLK.

Witnesses:

F. C. HAWKINS,
W. Y. CHRISTY.